

# **Conversations with a Killer Bacterium**

**Identifying new  
targets of Quorum  
Sensing sRNAs in  
*Vibrio cholerae***

**Joseph Elsherbini**

**Dr. Brian Hammer**



<http://www.daylife.com/photo/0bFFexe311bAr>



<http://www.daylife.com/photo/0dxX5ya7VH1Vy>



<http://www.designthatmatters.org/portfolio/projects/iv-drip/>



Wait fellas, just  
be patient.  
Muahahaha



**Signal  
Molecules**



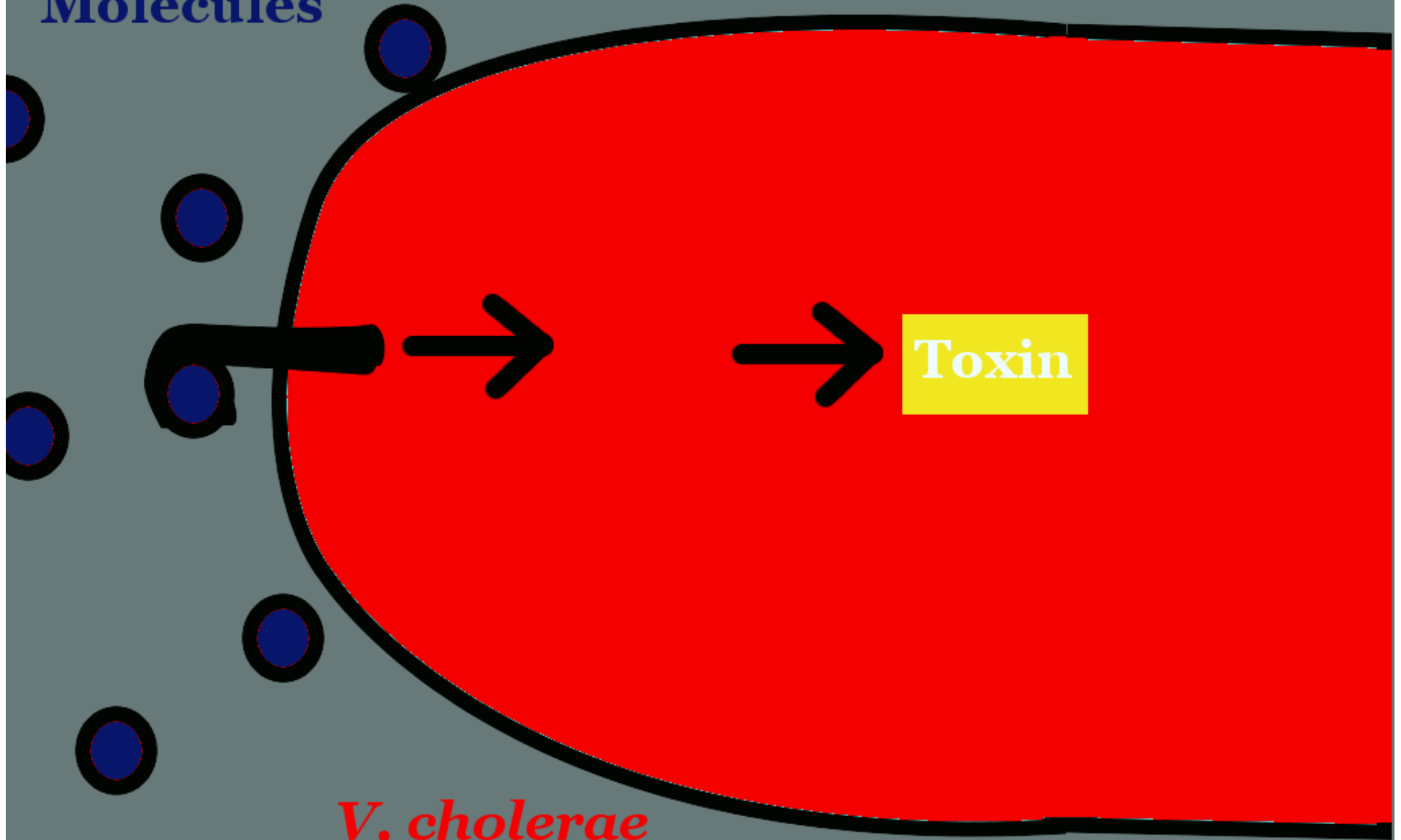
Alright  
Gang!

Attack!

Let's get  
busy!

**Signal  
Molecules**

Signal  
Molecules

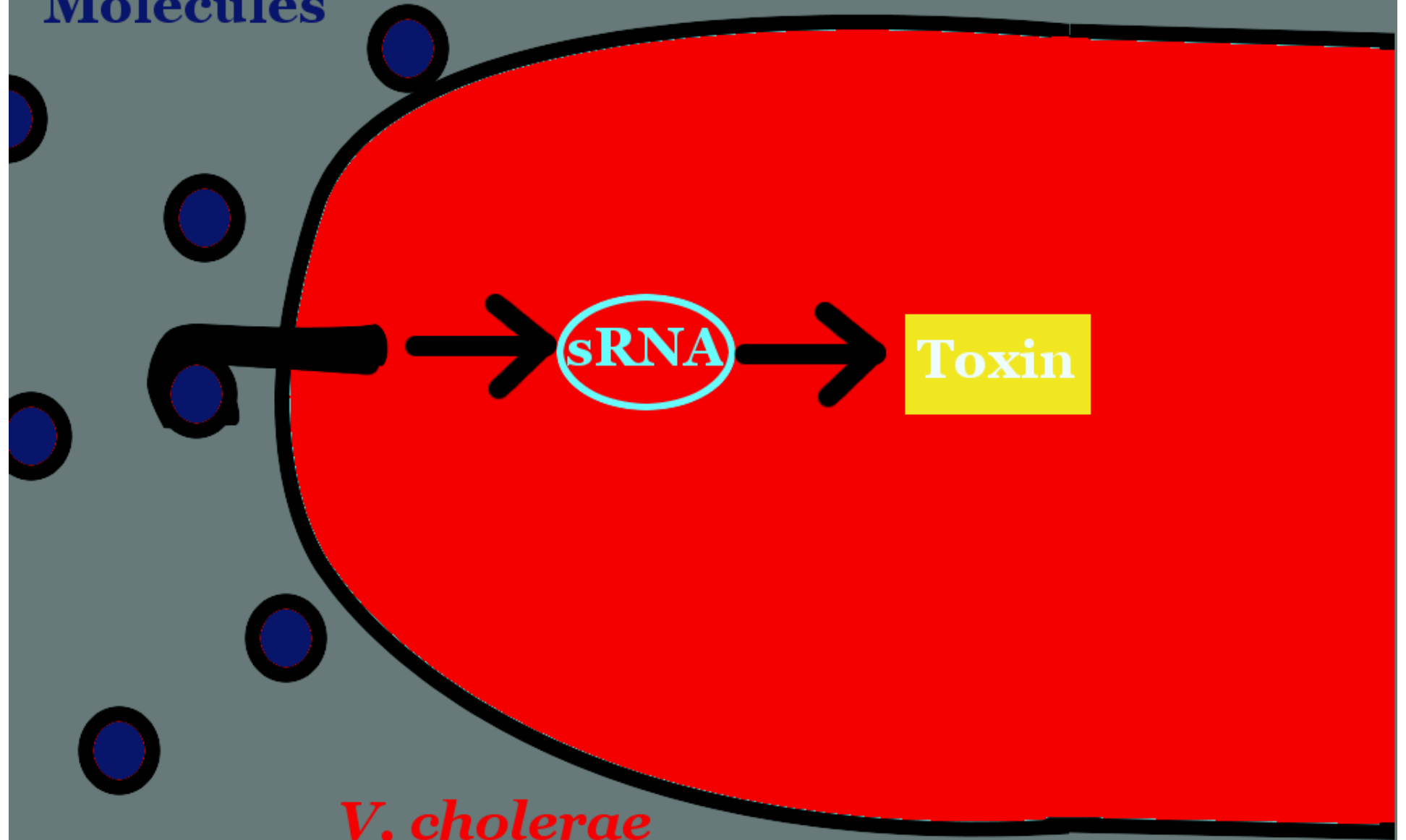


*V. cholerae*

Toxin

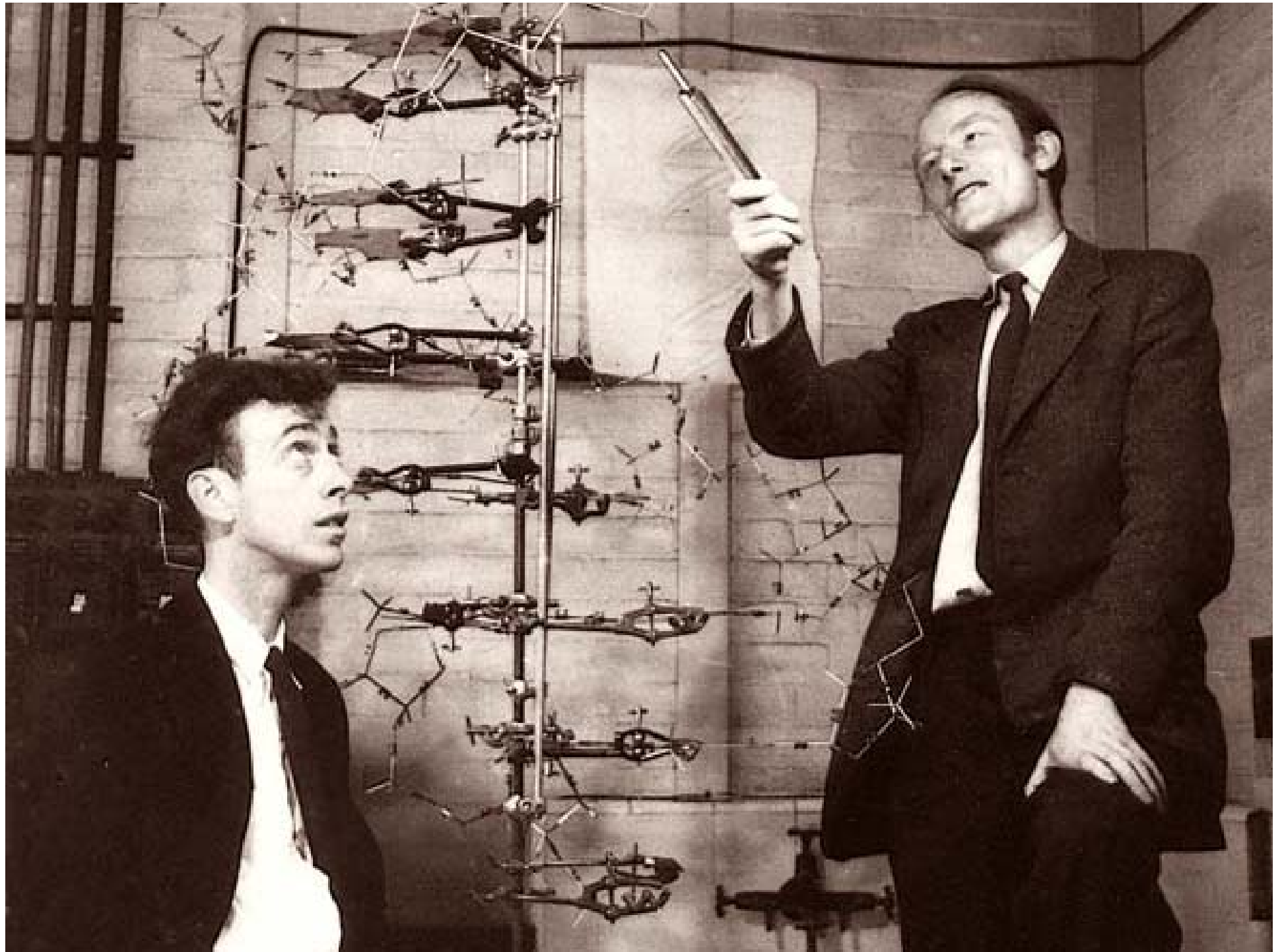


Signal  
Molecules

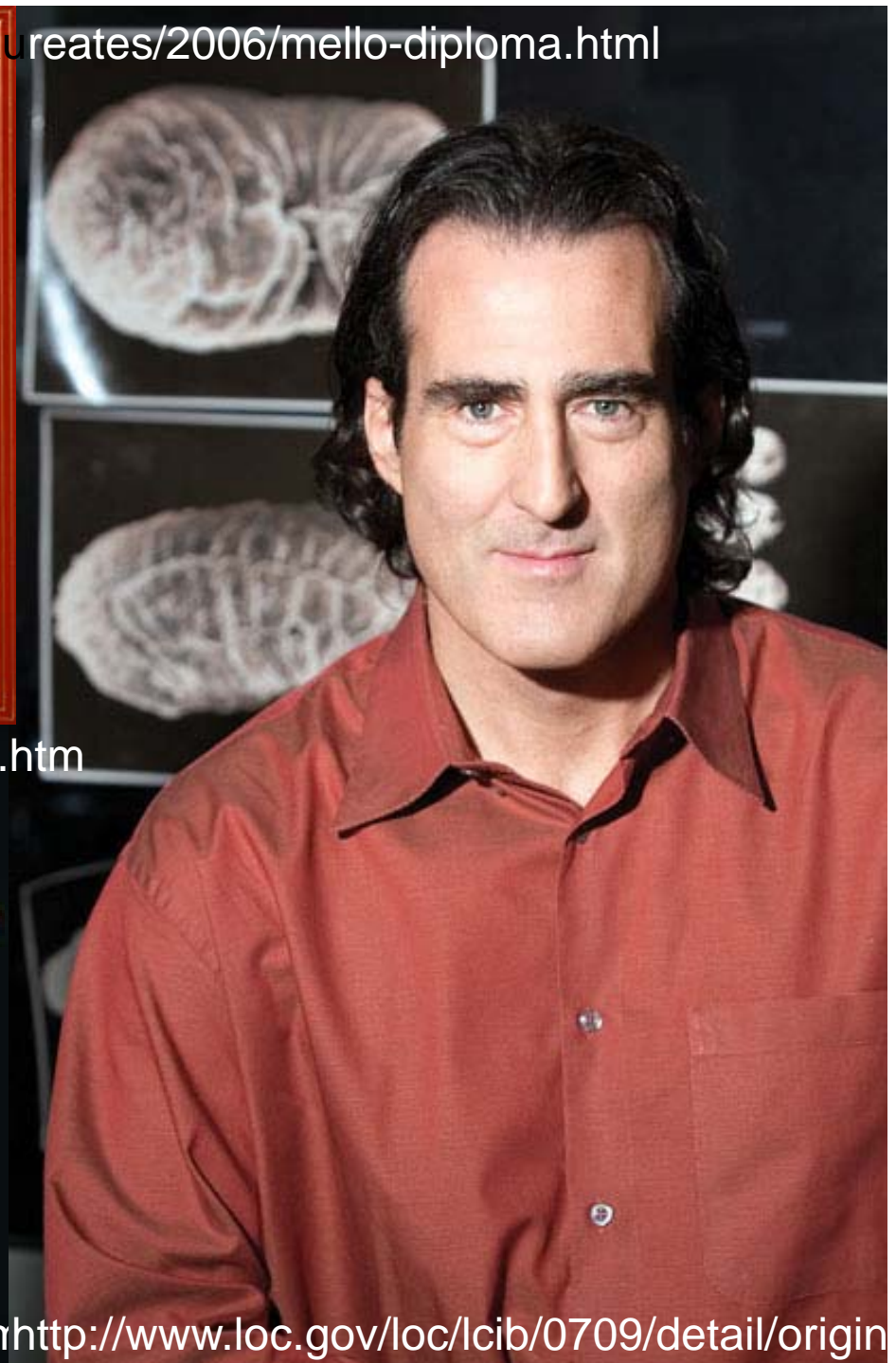


*V. cholerae*

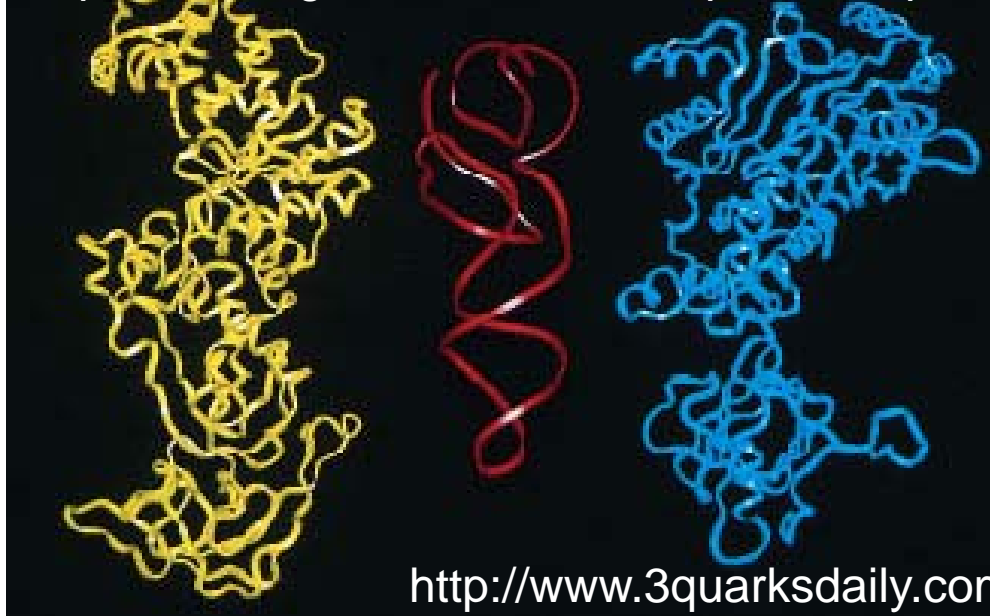




[http://nobelprize.org/nobel\\_prizes/medicine/laureates/2006/mello-diploma.html](http://nobelprize.org/nobel_prizes/medicine/laureates/2006/mello-diploma.html)



<http://web.virginia.edu/Heidi/chapter32/chp32.htm>



<http://www.3quarksdaily.com> <http://www.loc.gov/loc/lcib/0709/detail/origin>

Quorum  
Sensing sRNA

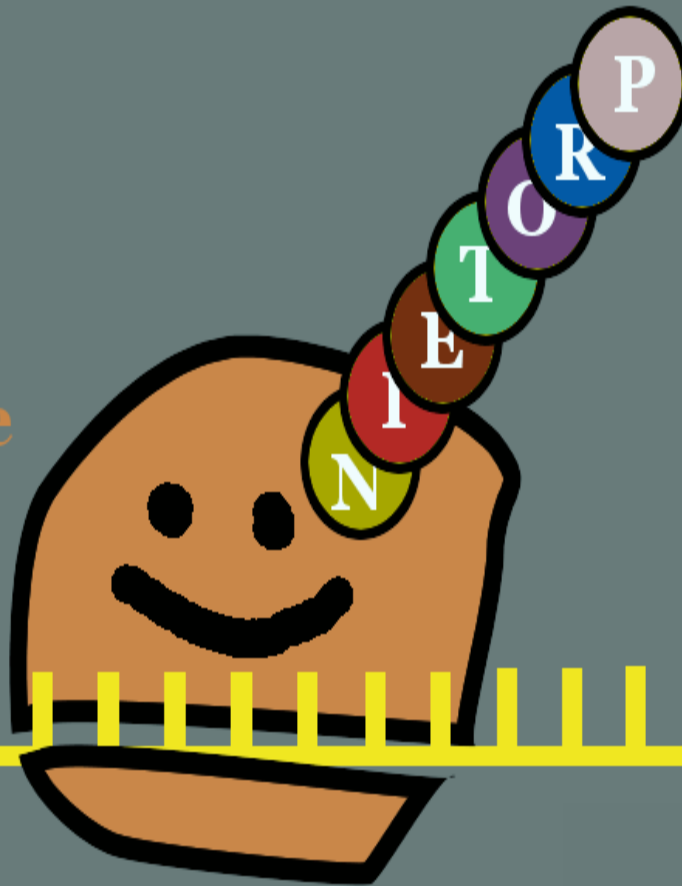
Ribosome Binding Site

*V. cholerae*  
TOXIN (mRNA)



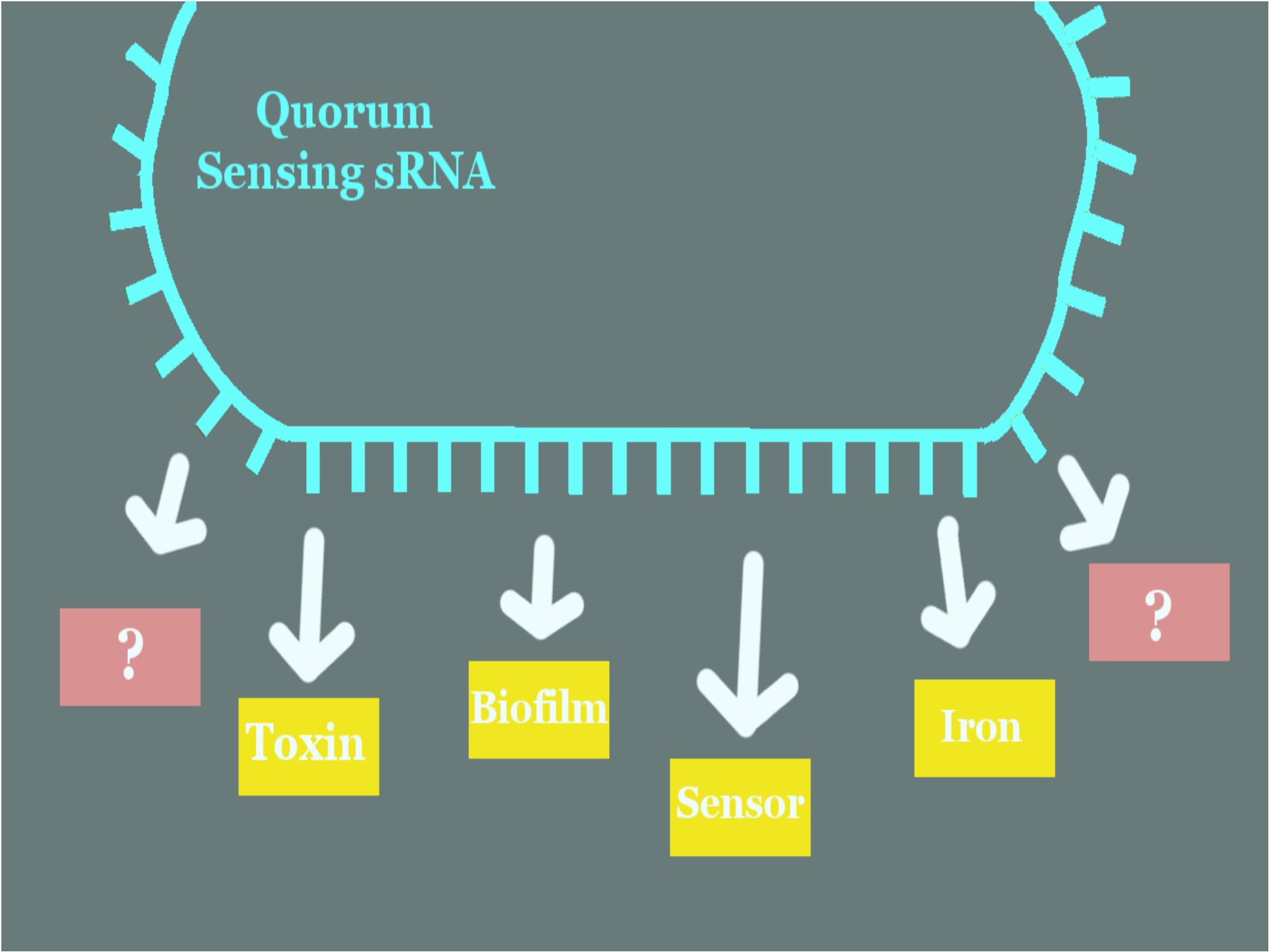
Ribosome

Ribosome



TOXIN (mRNA)

Quorum  
Sensing sRNA



The diagram illustrates the regulatory role of Quorum Sensing sRNA. A large, light blue, U-shaped structure with a serrated edge represents the sRNA. Inside this structure, the text 'Quorum Sensing sRNA' is written in black. Below the sRNA, a series of vertical black lines represent the binding sites for the sRNA. White arrows point from these binding sites to various regulatory targets. From left to right, these targets are: a red box with a white question mark, a yellow box labeled 'Toxin', a yellow box labeled 'Biofilm', a yellow box labeled 'Sensor', a yellow box labeled 'Iron', and another red box with a white question mark. The background is a solid light blue color.

?

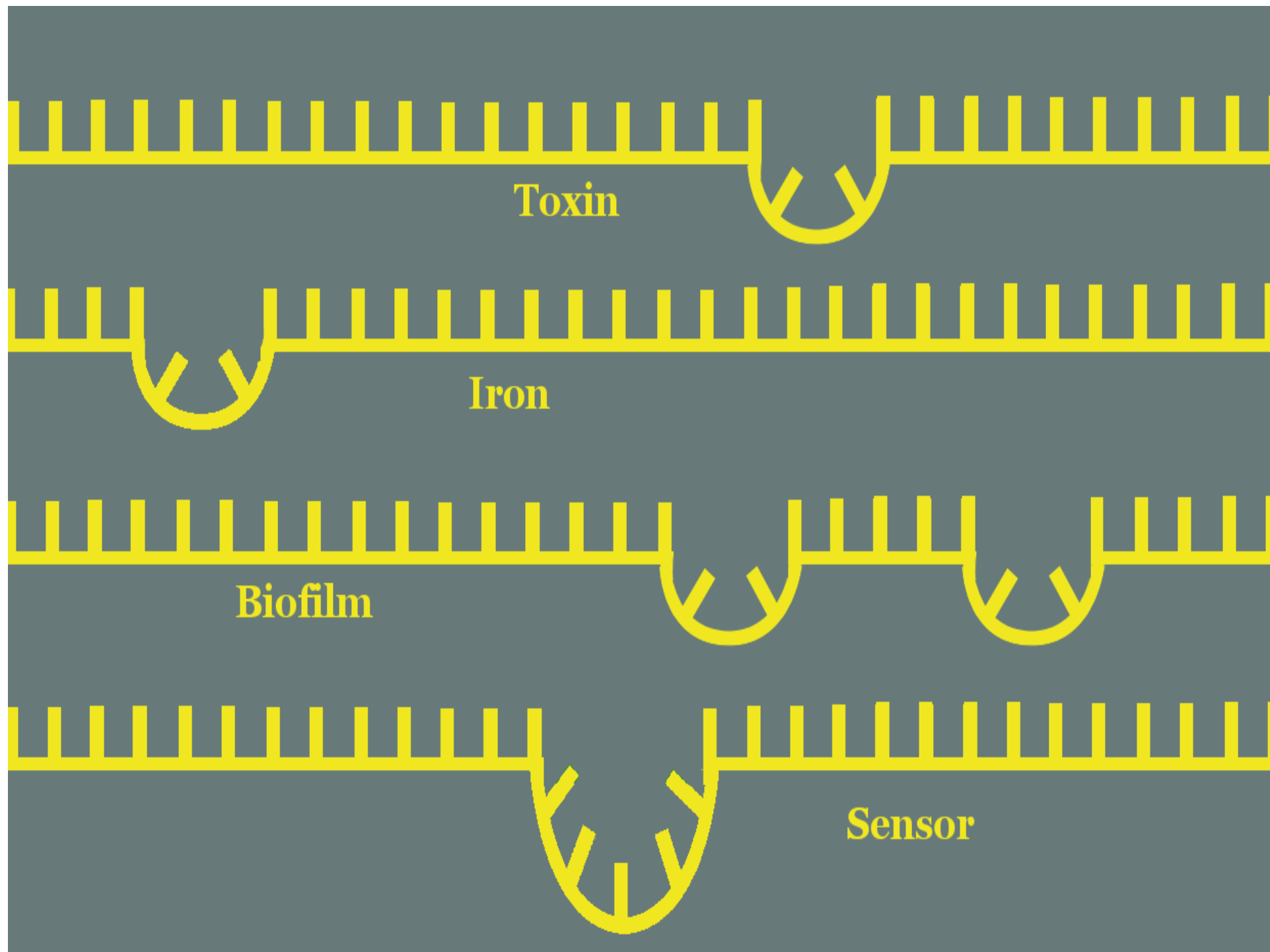
Toxin

Biofilm

Sensor

Iron

?



[illegible]



**Toxin**



**2**



**3**



**Biofilm**



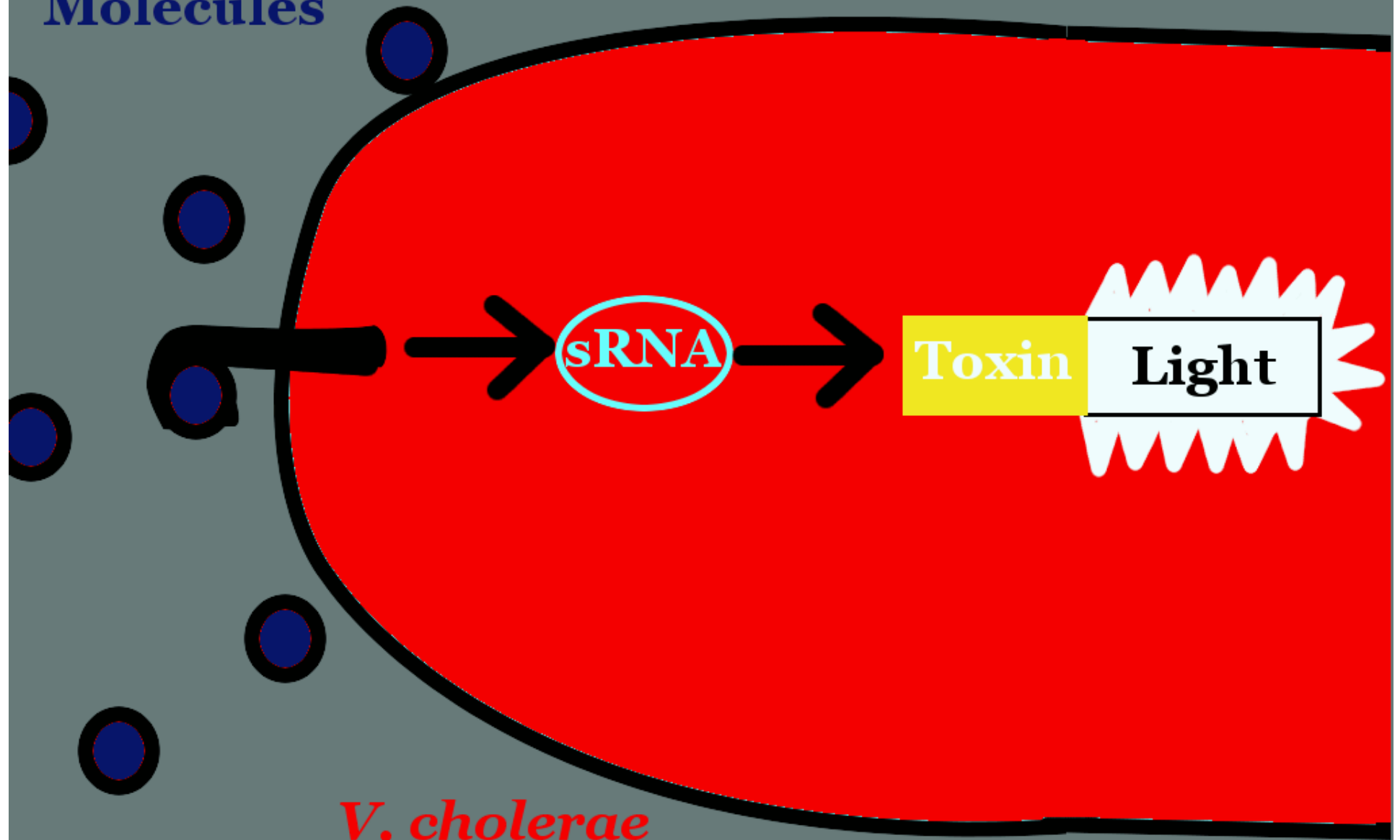
**5**





<http://www.who.edu/page.do?pid=10897&i=1721&x=201>

Signal  
Molecules



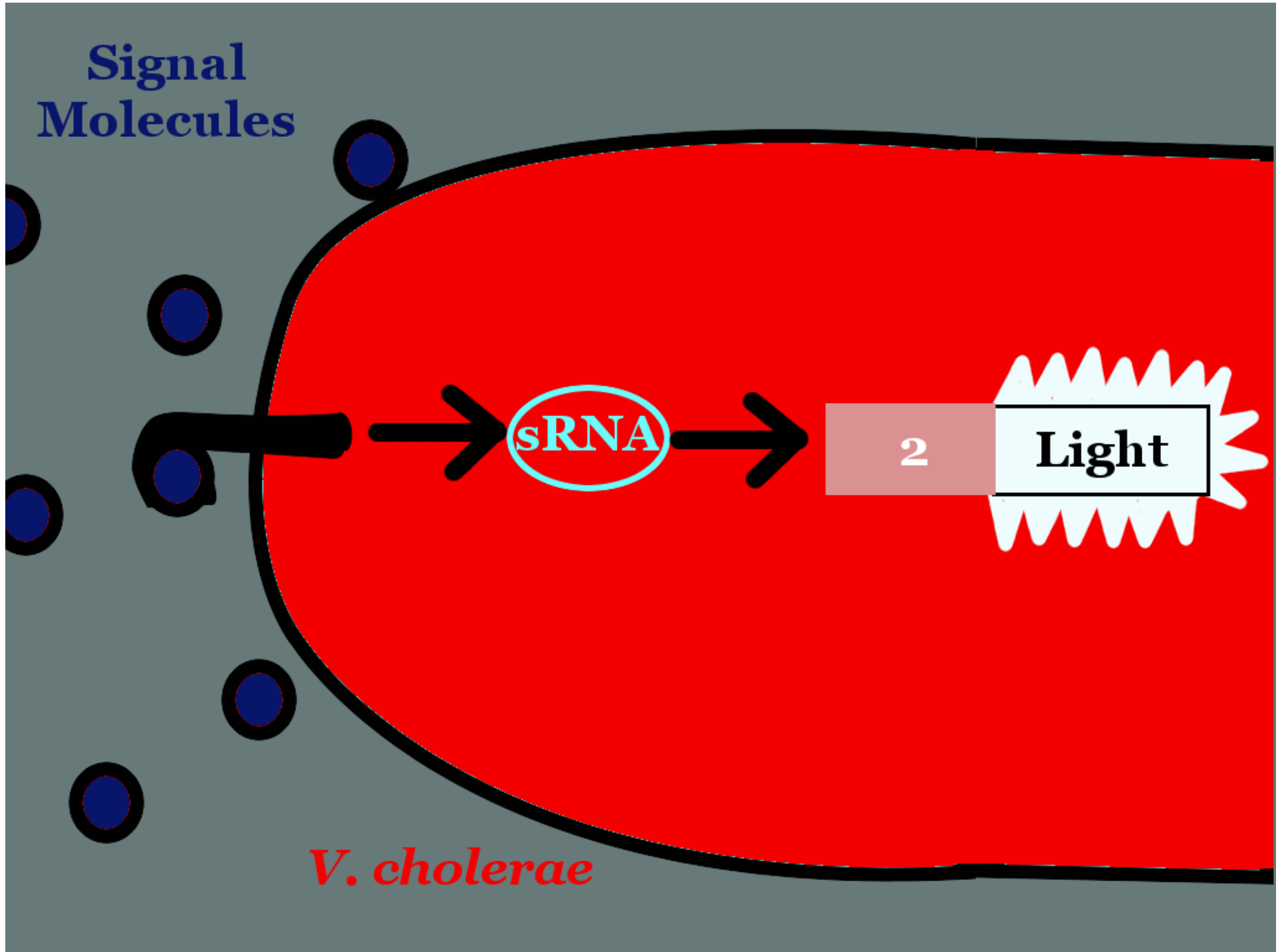
Signal  
Molecules

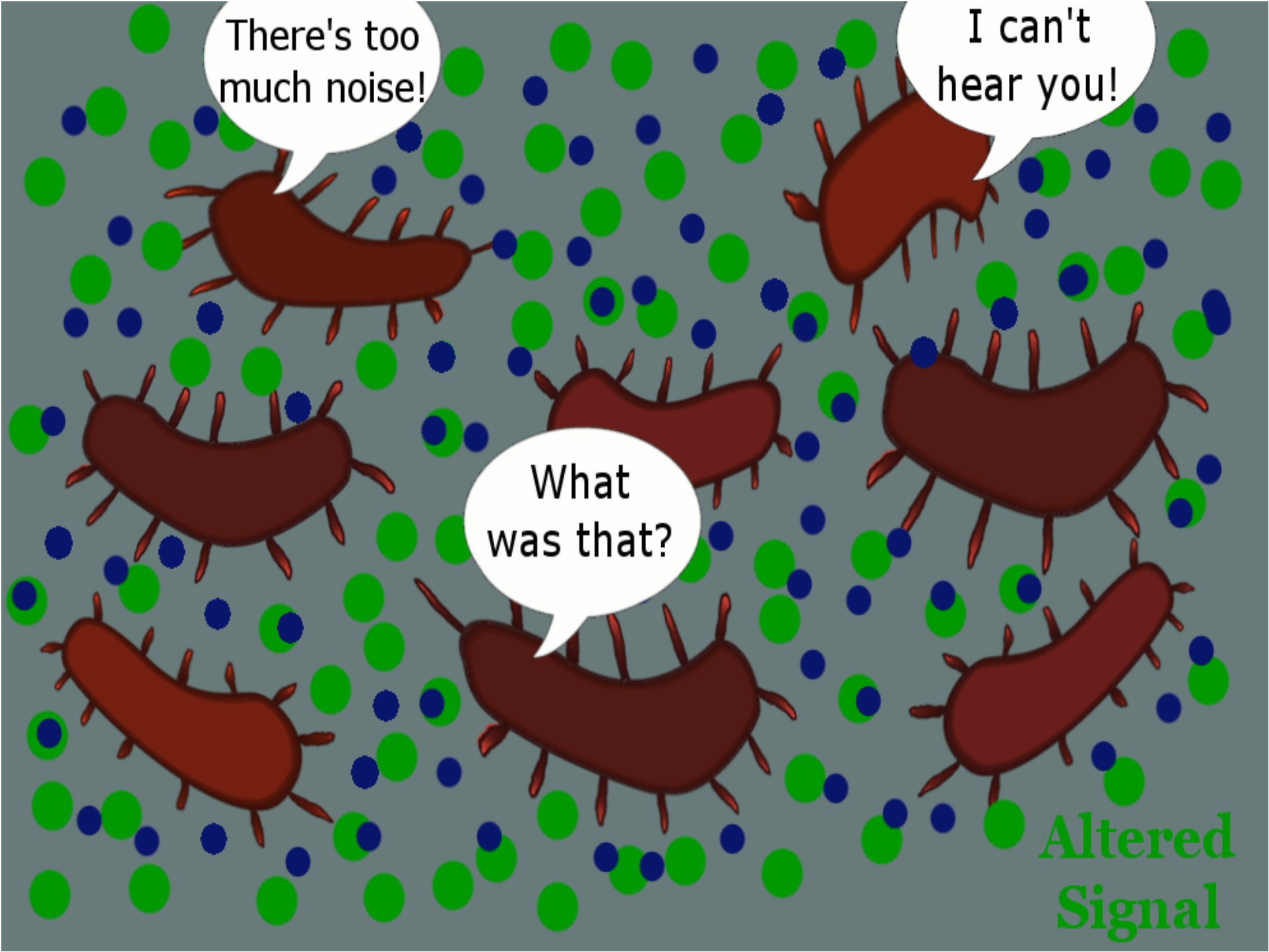
sRNA

2

Light

*V. cholerae*





There's too much noise!

I can't hear you!

What was that?

Altered  
Signal